Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-1703

Operations and Services
Dissemination Services NWSPD 10-17

VALID TIME EVENT CODE (VTEC)

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/.

OPR: OS51 (H. White) **Certified by:** OS5 (D. Wernly)
Type of Issuance: Initial.

Gregory A. Mandt Date
Director, Office of Climate,
Water, and Weather Services

Valid Time Event Code (VTEC)

Table of Contents: Page

1. Introduction. The Valid Time Event Code (VTEC) is used in conjunction with the Universal Geographic Code (UGC) (see National Weather Service Instruction [NWSI] 10-1702 for a description of UGC) to further aid in the automated delivery of National Weather Service (NWS) text products to users.

There are two forms of VTEC described in this document: (1) the "primary" or **P**-VTEC, and (2) in certain hydrologic products, a supplementary hydrologic or **H**-VTEC that always is used in conjunction with, and occurs on the line immediately after, the P-VTEC. The P-VTEC rules and format are described in sections 1, 2 and 3; the H-VTEC rules and format, providing flood information for certain products, are described in section 4.

The Advanced Weather Information Processing System (AWIPS) formatters automatically produce the P-VTEC and H-VTEC line(s) in appropriate products from forecaster input, but without direct forecaster intervention.

1.1 Mission Connection. The NWS mission to protect life and property, and to enhance the national economy, is carried out by timely delivery through a variety of dissemination systems of warnings, watches, forecasts, and other relevant weather, flood, climate, and critical non-weather-related information under the "all hazards" concept (see definition in NWS Policy Directive 10-17). Correct use of product formats and codes is essential to ensure this delivery and allow users to select, manipulate, and redistribute the information regardless of the dissemination method of receipt.

1.2 Implementation. The implementation of P-VTEC and H-VTEC in products will occur on the effective date of this NWS Instruction or a date given later in a NWS Service Change Notice at least 60 days prior to the NWS Instruction effective date and the new implementation date. The VTEC Implementation Plan lists NWS products that will be disseminated using the VTEC line(s) and many more product examples and associated VTEC line interpretations. The VTEC Implementation Plan, as updated, is available on the Internet at: http://www.nws.noaa.gov/om/vtec/.

The goal is for all event-driven products that include the UGC to include the P-VTEC and, where appropriate, also the H-VTEC. Additional codes will be added to the VTEC element tables in Appendices A and B as needed for future text products.

1.3 Basic Definitions of the VTEC.

a. The **P**-VTEC identifies characteristics of the event(s), including (1) its status, type, and tracking number, and (2) the event(s) beginning and ending time(s) (see section 1.5).

b. The **H**-VTEC line is "triggered" when the Phenomena Code in the P-VTEC is FL for Flood or FF for Flash Flood. The H-VTEC identifies the flood severity, immediate cause, timing of flood beginning, crest, and end, and whether the flood

will be (near) a record. The H-VTEC occurs on a line immediately after the P-VTEC line.

1.4 Event vs. Product. It is important to understand the distinction between an "event" and a "product" to use the P-VTEC properly.

a. **Event**: A specific combination of phenomena (e.g., type of weather, flood) and significance level of alert (e.g., watch, warning, advisory). See Appendix A for a list of phenomena and significance levels. Common examples of events described in this document include Winter Storm Watch, Wind Advisory, Flood Warning.

b. **Product**: The entire message issued to the public under a single Mass News Disseminator header, that may include information on one or more events.

For example, if "heat" is the phenomena and "advisory" is the significance level, then a "heat advisory" is the event and the public receives the information by the Non-Precipitation Weather (NPW) product. Similarly, a blizzard warning and a lake effect snow advisory are each events. The public receives the information for either event in a Winter Storm (WSW) product.

1.5 Product Purge Time vs. Event Ending Time.

a. **Product Purge Time**: Found at the end of the last UGC group for an event, it is the time the product or product segment should no longer be used. In long-duration Watch/Warning/Advisory (W/W/A) products, when the event(s) is ongoing, the product purge time is the time when customers can expect to receive an updated product.

b. **Event Ending Time**: The last group of the P-VTEC line, it is the time when the event is no longer valid.

2. Primary (P)-VTEC Format. The P-VTEC line(s) (and any H-VTEC line[s]) occurs immediately after the UGC line(s) and before any plain language listing of zones or counties affected or other words identifying the affected area that corresponds to the UGC line(s). This is true for segmented and non-segmented products.

2.1 Generic Structure of P-VTEC Elements.

/aaa.cccc.pp.s.####.yymmd$_B$d$_B$ThhnnZ-yymmd$_E$d$_E$ThhnnZ/

where "aaa.cccc.pp.s.####" is the "event," and yymmddThhnnZ-yymmddThhnnZ is the beginning and ending date/time in Universal Coordinated Time (UTC), respectively.

Event Group		Date/Time Group	
aaa	- Action	**yy**	- Year
cccc	- Office ID	**mm**	- Month

pp	- Phenomena	**d_Bd_BThhnn**	- Event Beginning Date/Time group
s	- Significance	**d_Ed_EThhnn**	- Event Ending Date/Time group
####	- Event Tracking Number (ETN)	**Z**	- Universal Coordinated Time

Notes: (1) The "T" in the Date/Time Groups is a fixed Time Indicator, with the following "hh" and "nn" being the hours and minutes in UTC, respectively. The Z is the fixed UTC indicator. (2) The forward slash ('/'), period ('.'), and dash ('-') in the format are delimiters that separate fields for ease in decoding. The date/time format follows the FIPS/ANSI/ISO standard (FIPS 4-2:1998/ANSI x3.30-1997/ISO 8601:2000).

2.2 P-VTEC Element Definitions.

2.2.1 **aaa** (Action): Identifies the action in the product issuance.

Action Code Definitions:

NEW (NEW) - Used for an initial issuance of an event. Also used for an event that has replaced another event for the same area, as when an event is upgraded (see the "UPG" action term below).

CON (CONTINUED) - Used when providing updates to an existing event, where no changes were made to the area, valid time period or Significance category.

EXT (EXTENDED IN TIME) - The valid time period of an existing event has been made longer or shorter by changing either or both the Event Beginning or Ending Date/Time Group.

EXA (EXTENDED IN AREA) - The valid area of the W/W/A has been expanded from its initial issuance.

EXB (EXTENDED IN BOTH TIME AND AREA) - The valid time period and valid area of the W/W/A have been extended.

UPG (UPGRADED) - Used when an event for the same area is upgraded to a higher significance level, e.g., from a watch to an advisory or warning, and from an advisory to a warning. Two P-VTEC lines are used: The UPG is used in the first P-VTEC line to show the event being upgraded from (e.g., an advisory) and the NEW is used in the second P-VTEC line to show the event upgraded to (e.g., a warning).

CAN (CANCELED) - Used when an event has been canceled before its Event Ending Date/Time Group.

EXP (EXPIRED) - Used when the Event Ending Date/Time Group has been reached and the event is no longer active.

ROU (ROUTINE) - Used mainly for marine products when there are no W/W/As in effect.

COR (CORRECTION) - Used when correcting any errors to a previous message, including a change to the coding or area affected, text wording, etc.

TES (TEST) - Used when the message has been issued strictly for test purposes, including communications tests, severe weather tests/drills, etc.

2.2.2 **cccc** (Office ID). The standard four-letter identifier indicating the NWS office with the primary responsibility for the affected area. The office ID is the same as that in the plain language Mass News Disseminator (MND) header. Any NWS office providing backup service will use the primary office's cccc.

2.2.3 **pp** (Phenomena). Identifies the type of weather or non-weather occurrence (e.g., high wind, freezing rain). See Appendix A for the Phenomena codes.

2.2.4 **s** (Significance). Identifies the level of alert (e.g., watch, warning, advisory, etc.) of the weather or non-weather occurrence. See Appendix A for the Significance codes.

2.2.5 #### (Event Tracking Number - ETN). The ETN is assigned sequentially by AWIPS for each type of event issued by each office, starting with 0001 for the first event of its type for the calendar year. A new ETN is assigned when first issuing the event, and the same ETN is carried when the event is continued, canceled or extended (in area, time or both). The ETN is incremented each time a new weather system causes the same event type to be issued. If backup service is required from another office, the primary office's ETN is used. The ETN will be set to all zeros (0000) for all test products.

For products (e.g., WSW, NPW) that may include more than one event, each specific event within the product will have its own ETN. For example, an office issues a WSW product early in the calendar year with the following segments (each describing a specific event for a specific geographic area) and corresponding ETNs:

Event	ETN
(1) Blizzard Warning	0002 (2nd Blizzard Warning of the year)
(2) Winter Storm Warning	0004 (4th Winter Storm Warning of the year)

Two weeks later, a new weather system causes the same office to issue a WSW with the same order of segments, with the following corresponding ETNs:

Event	ETN
(1) Blizzard Warning	0003 (3rd Blizzard Warning of the year)

(2) Winter Storm Warning 0005 (5th Winter Storm Warning of the year)

A broad weather system may cause several offices to issue the same event for their area of responsibility, say a Winter Storm Watch, within a WSW product. That watch may have different ETNs from each issuing office, depending on how many prior Winter Storm Watches each office issued.

2.2.6 **yymmd$_B$d$_B$ThhnnZ and yymmd$_E$d$_E$ThhnnZ** (Event Beginning and Ending Date/Time Groups). These groups, respectively, identify the valid time period of the event in UTC.

a. **Event Beginning Date/Time Group** identifies when the event (e.g., Lake Effect Snow Advisory) will become effective. This will not necessarily correspond with the product issuance date/time in the MND header (in local time) and in the World Meteorological Organization abbreviated header (in UTC). But in any case, the Event Beginning Date/Time may be later than the product issuance time, but will never be earlier.

b. **Event Ending Date/Time Group** identifies when the event will no longer be in effect. This will not necessarily correspond to the product purge date/time found at the end of the last UGC group (in UTC).

Special coding of the **Event Beginning Date/Time Group** is used when an action (continued, extended in area/time, upgraded, canceled or expired) has been taken after an event has begun. In these cases, the yymmd$_B$d$_B$ThhnnZ is coded with ten zeros (000000T0000Z). This will prevent an accidental invalidation of an ongoing event. Similarly, updates to an event (e.g., further information on a watch or warning that was issued previously) will cause the yymmd$_B$d$_B$ThhnnZ to be coded "000000T0000Z" to indicate the event is ongoing (i.e., not new) and not a new issuance.

Examples of Event Timing Codes: Following are examples of P-VTEC lines for various events to illustrate date/time group coding when the event is issued before or within the valid time periods.

ACTION	**BEFORE VALID TIME**	**WITHIN VALID TIME**
NEW	/NEW.KRLX.BZ.A.0002.021222T1700Z-021223T0400Z/	N/A
CONTINUED	/CON.KCLE.LE.A.0357.021018T1500Z-021019T0200Z/	/CON.KCLE.LE.A.0357.000000T0000Z-021019T0200Z/
EXTENDED	/EXT.KLWX.WS.A.0002.030116T1800Z-030116T2200Z/	/EXT.KLWX.WS.A.0002.000000T0000Z-030117T0100Z/
CANCELED	/CAN.KMKX.SN.W.0125.030207T2200Z-030208T0930Z/	/CAN.KMKX.SN.W.0125.0000T000000Z-030208T0930Z/
EXPIRED	N/A	/EXP.KMSO.WC.Y.0009.0000T000000Z-021118T0800Z/
TEST	/TES.KLOT.HT.Y.0000.021208T1430Z-021208T1500Z/	/TES.KLOT.HT.Y.0000.000000T0000Z-0212T261500Z/

Note: When a new event is effective upon issuance, the Event Beginning Date/Time group is coded with the issuance date/time of the product. For example, if the issuance date/time is December 14, 2002, 1252 UTC, for a WSW product issued by Weather Forecast Office (WFO) Kansas City/Pleasant Hill, MO, that describes the 4th Freezing Rain Advisory of the calendar year for that office, the P-VTEC line is the following:

/NEW.KEAX.ZR.A.0004.021214T1252Z-021214T1430Z/

3. Special Rules, Applications and Interpretations. This section explains unique applications of VTEC in specific products.

3.1 Event Significance Level Change or Replacement in WSW/NPW/Fire Weather Products. Two P-VTEC lines are required in WSW/NPW/Fire Weather Products when an event for the same area is upgraded/downgraded to a different significance level or replaced by a different event, e.g., a watch is being upgraded to a warning or advisory, an advisory is being upgraded to a warning, a warning is being downgraded to an advisory, or an event warning/advisory is being replaced by another event warning/advisory.

a. First VTEC line - action code UPG or CAN is used to show the old W/W/A being upgraded or canceled.
b. Second VTEC line - action code NEW is used to start new W/W/A.

Upgrade Watch to Warning Example:

OKZ006>008-011>024-033>036-TXZ083-281100-
/UPG.KOKC.WS.A.0004.010128T0500Z-010129T0000Z/
/NEW.KOKC.ZR.W.0003.010128T0500Z-010129T0000Z/

Downgrade from Warning to Advisory Example:

OKZ006>008-011>024-033>036-TXZ083-281100-
/CAN.KOKC.ZR.W.0004.000000T0000Z-010129T0000Z/
/NEW.KOKC.ZR.A.0003.010128T1100Z-010129T0000Z/

Replace Ice Storm Warning with Winter Storm Warning Example:

OKZ006>008-011>024-033>036-TXZ083-281800-
/CAN.KOKC.IS.W.0003.000000T0000Z-010129T0000Z/
/NEW.KOKC.WS.W.0005.010128T0530Z-010129T0000Z/

3.2 WFO Watch County Notification Product. The Watch County Notification (WCN) product will handle all aspects (issuance, clearing counties, continuing counties, cancel, expiration) of Severe Thunderstorm or Tornado Watch issuances at WFOs.

In WCN products, the Storm Prediction Center watch number will be used as the ETN. This allows WCN products from adjacent Weather Forecast Offices to have the same Event Tracking Number for the same watch (the Watch Outline Update product will not have the VTEC line when it is implemented).

Watch County Notification Example:

WATCH COUNTY NOTIFICATION FOR WATCH #1002
NATIONAL WEATHER SERVICE SHREVEPORT LA
230PM CDT SUN MAY 26 2003

ARC061-081-133-270100-
/CAN.KSHV.TO.A.1002.000000T0000Z-030527T0100Z/

THE NATIONAL WEATHER SERVICE IN SHREVEPORT HAS
CLEARED A PORTION OF TORNADO WATCH #1002.
COUNTIES CLEARED FROM THE TORNADO WATCH INCLUDE:

IN ARKANSAS:

HOWARD LITTLE_RIVER SEVIER
$$

ARC027-057-073-091-099-139-LAC013-015-017-027-031-081-119-TXC037-063-067-183-203-315-343-365-459-270100-
/CON.KSHV.TO.A.1002.000000T0000Z-030527T0100Z/

TORNADO WATCH #1002 REMAINS VALID UNTIL 700 PM CDT SUNDAY FOR THE FOLLOWING COUNTIES AND PARISHES:

(Rest of text)

$$

3.3 Severe Weather Statement Product. The Severe Weather Statement (SVS) product will have the phenomena, significance, and Event Tracking Number of the Tornado Warning or Severe Thunderstorm Warning it follows.

Severe Weather Statement Example:

Initial Tornado Warning:
SSC013-061815-
/NEW.cccc.TO.W.0003.020416T1730Z-020416T1815Z/

BULLETIN - EAS ACTIVATION REQUESTED
TORNADO WARNING
(rest of text)

$$

Follow-up Severe Weather Statement that Continues the Tornado Warning:
SSZ0243-161815-

/CON.cccc.TO.W.0003.000000T0000Z-020416T1815Z/

SEVERE WEATHER STATEMENT
NATIONAL WEATHER SERVICE OFFICE STATE
(rest of text)

$$

3.4 Marine Weather Products. For marine forecast products that are the sole sources of watches, warnings, and advisories, a VTEC line will be used to cover all time periods, even those without watches, warnings, and advisories. For time periods without a W/W/A, an action code of ROU, a phenomena code of MA, and a significance code of F will be used and the ETN will be set to all zeros (0000).

Nearshore Forecast (NSH) Example:
LHZ347-348-122130-
/ROU.KAPX.MA.F.0000.021912T1500Z-021914T1000Z/

3.4.1. Coastal Waters Forecast Product. For Coastal Waters Forecast (CWF) products, special rules exist if a Hurricane Watch, Hurricane Warning, Tropical Storm Watch, or Tropical Storm Warning is in effect.

a. Hurricane or Tropical Storm Watches or Warnings will trump all other warnings and advisories and will be the sole VTEC phenomena and significance codes, even if the event is valid for only part of a marine zone. If more than one Hurricane or Tropical Storm Watch or Warning is valid for different parts of the marine zone, the higher priority event will represent that zone determined as follows:

Priority 1 (highest) - Hurricane Warning
Priority 2 - Tropical Storm Warning
Priority 3 - Hurricane Watch
Priority 4 - Tropical Storm Watch

b. The only exception to section 3.4.2.a. above: When a Tropical Storm Warning and a Hurricane Watch is valid at the same time, each will be coded individually on two separate VTEC lines.

3.4.2. Offshore Waters Forecast Product. For Offshore Waters Forecast (OFF) products, special rules exist for each marine zone in the OFF if a Hurricane or Tropical Storm Warning is in effect. The Hurricane or Tropical Storm Warning will trump all other warnings and will be the sole VTEC even if the product is valid for only part of a marine zone. If a Hurricane and Tropical Storm Warning are valid for different parts of the marine zone, the Hurricane Warning will represent that zone.

3.4.3 Coastal and Marine Product Examples.

Coastal Waters Forecast (CWF) Product:
PZZ750-152230-
/CON.KSGX.GL.W.0005.021215T1030Z-021216T0400Z/
/ROU.KSGX.MA.F.0000.021216T0400Z-021217T2230Z/

Interpretation: A Gale Warning continues until 0400 UTC on the 16th. No watches, warnings, or advisories are in effect from 0400 UTC on the 16th to 2230 UTC on the 17th (end of Day 1-3 forecast section).

Offshore Waters Forecast (OFF) Product:
ANZ088-082000-
/ROU.KWBC.MA.F.0000.030808T0730Z-030809T0100Z/
/NEW.KWBC.HU.W.0003.030809T0100Z-030810T2000Z/

Interpretation: No warnings are in effect until 0100 UTC on the 9th.
A Hurricane Warning was issued. It is in effect from 0100 UTC on the 9th to 2000 UTC on the 10th (end of Day 1-3 forecast section).

Open Lake Forecast (GLF) Product:
LOZ060-112000-
/CON.KBUF.MA.W.0001.000000T0000Z-021111T2200Z/
/ROU.KBUF.MA.F.0000.021111T2200Z-021112T1700Z/
/NEW.KBUF.GL.W.0003.021112T1700Z-021112T2200Z/
/NEW.KBUF.SR.W.0002.021112T2200Z-021113T0800Z/
/ROU.KBUS.MA.F.0000.021113T0800Z-021113T2000Z/

Interpretation: A Special Marine Warning continues until 2200 UTC on the 11th. No watches, warnings, or advisories are in effect from 2200 UTC on the 11th to 1700 UTC on the 12th. A Gale Warning was issued. It is in effect from 1700 UTC on the 12th to 2200 UTC on the 12th. A Storm Warning was issued. It is in effect from 2200 UTC on the 12th to 0800 UTC on the 13th. No watches, warnings, or advisories are in effect from 0800 UTC on the 13th to 2000 UTC on the 13th (end of Day 1-3 forecast section).

4. Hydrologic H-VTEC Format. The specialized H-VTEC line in hydrologic products occurs in conjunction with, and immediately after, the P-VTEC line. The H-VTEC only follows a P-VTEC with a Phenomena Code of FL for Flood or FF for Flash Flood. The H-VTEC specifies the flood severity, immediate cause, timing of flood beginning, crest, and end, and how the flood compares to the flood of record.

4.1 Generic Structure of H-VTEC Elements.

/s.ic.$d_S d_S$ThhnnZ.$d_C d_C$ThhnnZ.$d_E d_E$ThhnnZ.fr/

where "s.ic." and the "fr" describe properties of the flood event, and the $d_S d_S$ThhnnZ.$d_C d_C$ThhmmZ.$d_E d_E$ThhmmZ provides the timing in UTC.

Event Group		Date/Time Group	
s	- Flood Severity	**$d_S d_S$ThhnnZ**	- Flood **Start** Date/Time Group
ic	- Immediate Cause	**$d_C d_C$ThhnnZ**	- Flood **Crest** Date/Time Group
fr	- Flood Record	**$d_E d_E$ThhnnZ**	- Flood **End** Date/Time Group

Notes: (1) The "T" in the Date/Time Groups is a fixed Time Indicator, with the following "hh" and "nn" being the hours and minutes in UTC, respectively. The Z is the fixed UTC indicator. (2) The forward slash ('/') and period ('**.**') in the format are delimiters that separate fields for ease in decoding.

4.2 H-VTEC Element Definitions.

4.2.1 **s** (Flood Severity). Identifies the severity of the flood. See Appendix B for Flood Severity codes.

4.2.2 **ic** (Immediate Cause). Identifies the immediate cause of the flood. See Appendix B for Immediate Cause codes.

4.2.3 **$d_S d_S$ThhnnZ.$d_C d_C$ThhnnZ.$d_E d_E$ThhnnZ** (Flood Timing). These groups, respectively, identify the beginning, crest, and end of the flood event by day, hour, and minute in UTC.

4.2.4 **fr** (Flood Record Status). Identifies how the flood compares to the flood of record. See Appendix B for the Flood Record Status codes.

5. A Complete Sample Product. See NWSI 10-1701 for details of overall product format, headers, and structure.

WGUS41 KCAR 241530
FLWCAR
MEZ002-250315- (UGC line)
/NEW.KCAR.FL.W.0003.030424T1530Z-030428T0000Z/ (P-VTEC line)
/1.ER.25T1600Z.27T0000Z.28T0000Z.NO/ (H-VTEC line)

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE CARIBOU ME
1130 AM EDT MON APR 24 2003

...THE NATIONAL WEATHER SERVICE HAS ISSUED A FLOOD WARNING FOR THE ST JOHN RIVER AT FT KENT...

AT 11 AM EDT...THE RIVER STAGE AT FORT KENT WAS 15.33 FEET.

FLOOD STAGE IS 20 FEET. THE RECENT HEAVY RAINS HAVE ALLOWED THE RIVER TO RISE. THE RIVER IS EXPECTED TO GO ABOVE FLOOD STAGE AT 11 AM EDT WEDNESDAY APRIL 25 AND IS EXPECTED TO CREST AT 21.1 FEET AT 7 PM EDT WEDNESDAY.

$$

Interpretation: WFO Caribou, ME, issued an FLW (the 3rd of the year) on April 24, 2003, valid from 1530 UTC on the 24th to 0000 UTC on 28th (from the P- VTEC line) (for Maine Zone 2 - from the UGC line). The minor flood was caused by excessive rainfall, was not expected to be a record, with the flood expected to begin on April 25 about 1600 UTC, crest on the 27th about 0000 UTC, and end on the 28th about 0000 UTC (from the H-VTEC line).

APPENDIX A - Listing of P-VTEC Elements

Generic P-VTEC Structure

/aaa.cccc.pp.s.####.yymmd$_{BdB}$ThhnnZ-yymmd$_{EdE}$ThhnnZ/

ACTIONS (aaa)

NEW	NEW EVENT
CON	EVENT CONTINUED
EXT	EVENT EXTENDED (TIME)
EXA	EVENT EXTENDED (AREA)
EXB	EVENT EXTENDED (BOTH TIME AND AREA)
CAN	EVENT CANCELED
UPG	EVENT UPGRADED
EXP	EVENT EXPIRED
COR	CORRECTION
ROU	ROUTINE
TES	TEST

SIGNIFICANCE (s)

W	WARNING
A	WATCH
Y	ADVISORY
S	STATEMENT
O	OUTLOOK
F	FORECAST
N	SYNOPSIS

PHENOMENA (pp)

BZ	BLIZZARD
WS	WINTER STORM
WW	WINTER WEATHER
SN	SNOW
HS	HEAVY SNOW
LE	LAKE EFFECT SNOW
BS	BLOWING/DRIFTING SNOW
SB	SNOW AND BLOWING SNOW
IP	SLEET
HP	HEAVY SLEET
ZR	FREEZING RAIN
IS	ICE STORM
FZ	FREEZE
ZF	FREEZING FOG
FR	FROST
WC	WIND CHILL
WI	WIND
HW	HIGH WIND
FG	DENSE FOG
SM	SMOKE
HT	HEAT
EH	EXCESSIVE HEAT
DU	BLOWING DUST
DS	DUST STORM
FL	FLOOD
FF	FLASH FLOOD
SV	SEVERE THUNDERSTORM
TO	TORNADO
FW	FIRE WEATHER (RFW, FWW)
RH	RADIOLOGICAL HAZARD
VO	VOLCANO
AF	VOLCANIC ASHFALL
AS	AIR STAGNATION
AV	AVALANCHE
TS	TSUNAMI
MA	MARINE
SC	SMALL CRAFT
GL	GALE
SR	STORM
HF	HURRICANE FORCE WIND
TR	TROPICAL STORM
HU	HURRICANE
TY	TYPHOON
TI	INLAND TROPICAL STORM WIND
HI	INLAND HURRICANE WIND
LW	LAKE WIND
LS	LAKESHORE FLOOD
CF	COASTAL FLOOD
UP	ICE ACCRETION
LO	LOW WATER
SU	HIGH SURF

Note: Additional codes will be added as needed for future text products.

APPENDIX B - Listing of H-VTEC Elements

Generic H-VTEC Structure

/s.ic.d_Sd_SThhnnZ.d_Cd_CThhnnZ.d_Ed_EThhnnZ.fr/

Flood Severity (s)		**Immediate Cause (ic)**	
n	None	ER	Excessive Rainfall
1	Minor	SM	Snow melt
2	Moderate	RS	Rain and Snow melt
3	Major	DM	Dam or Levee Failure
u	Unknown	GO	Glacier-Dammed Lake Outburst
		IJ	Ice Jam
		IC	Rain and/or Snow melt and/or Ice Jam
		UU	Unknown
Flood Timing		**Flood Record Status (fr)**	
$d_Sd_S$hhmm	Start	NO	A record flood is not expected
$d_Cd_C$hhmm	Crest	NR	Near record or record flood expected
$d_Ed_E$hhmm	End	UU	Flood without a period of record to compare

Note: Additional codes will be added as needed for future text products.

APPENDIX C - Examples and Interpretations

Table of Contents: Page

1. P-VTEC Examples and Interpretations. Following are examples of P-VTEC lines and interpretations (including the preceding UGC line that defines the affected geographic area and product purge time) for (a) single event within one segment, (b) multiple events within one segment, (c) change to an event, and (d) a complete sample product.

   a. Single Event (within one product segment, with one UGC grouping).

Example (1)

VAZ088>98-261300- (UGC line)
/NEW.KAKQ.FG.Y.0009.021226T0700Z-021226T1400Z/ (P-VTEC line)

Interpretation: WFO Wakefield, VA, issued an NPW for its ninth Dense Fog Advisory (of the calendar year), valid December 26, 2002, from 0700-1400 UTC (P-VTEC line) (for Virginia zones 88 through 98 - from the UGC line).

Example (2)

NDZ002>005-010>013-018>023-221800- (UGC line)
/CAN.KBIS.BZ.A.0002.000000T0000Z-030122T1900Z/ (P-VTEC line)

Interpretation: WFO Bismarck, ND, issued a WSW to cancel a Blizzard Watch (the second of the year) on January 22, 2003, effective at 1900 UTC (P-VTEC line) (for North Dakota zones 2-5, 10-13, and 18-23 - from the UGC line).

Example (3)

MSZ049-081400- (UGC line)
/TES.KJAN.EH.W.0000.030408T1415Z-030408T1445Z/ (P-VTEC line)

Interpretation: WFO Jackson, MS, issued an NPW for a test Excessive Heat Warning on April 8, 2003, valid from 1415-1445 UTC, (P-VTEC line) (for Mississippi zone 49 - from the UGC line).

b. Multiple Events (within one segment, with one UGC grouping).

Example (1)

AZZ022-023-027-028-121630- (UGC line)
/NEW.KPSR.DU.W.0005.031112T1730Z-031113T0300Z/ (P-VTEC ln 1)
/CON.KPSR.HW.W.0009.000000T0000Z-031112T2100Z/ (P-VTEC ln 2)

Interpretation: WFO Phoenix, AZ, issued an NPW on November 12, 2003, for two events within the same segment (Arizona zones 22, 23, 27, 28 - from the UGC line): (1) its 5th Blowing Dust Warning, valid from 1730 UTC on November 12 until 0300 UTC on November 13 (P-VTEC line 1); and (2) continued a High Wind Warning (its 9th of the year), valid until 2100 UTC on November 13 (P-VTEC line 2).

c. Change to an Event (requires multiple VTECs).

Example (1) (upgrade part of watch to warning - requires two segments)

(segment 1 of 2 within WSW)
TXZ001>010-180400- (UGC line)
/UPG.KAMA.WS.A.0011.000000T0000Z-031218T0800Z/ (P-VTEC ln 1)
/NEW.KAMA.SN.W.0007.031217T2200Z-031218T0800Z/ (P-VTEC ln 2)

(segment 2 of 2 within WSW)
TXZ011>020-180400- (UGC line)
/CON.KAMA.WS.A.0011.000000T0000Z-031218T0800Z/ (P-VTEC line)

Interpretation: A watch was in effect for WFO Amarillo, TX, zones 1-20. The WFO then issued a WSW upgrading part of the watch (Texas zones 1-10 - from the UGC line, segment 1) to a warning, while the rest of the watch area (Texas zones 11-20, from the UGC line, segment 2) continued unchanged. Two segments are used:

Segment one (Texas zones 1-10): Two P-VTEC lines are used: P-VTEC line (1) provides "closure" of TX zones 1-10 that were originally under the 11th Winter Storm Watch of the year (which was to have expired on December 18, 2003, at 0800 UTC. P-VTEC line (2) begins the upgrade as a new Heavy Snow Warning (the 7th of the year), valid from December 17, 2003, at 2200 UTC to the 18th at 0800 UTC.

Segment two (Texas zones 11-20): The one P-VTEC line continues the Winter Storm Watch (the 11th of the year) for the remaining TX zones 11-20, valid until December 18, 2003, at 0800 UTC.

Example (2) (cancel part of warning, downgrade part of warning to advisory, extend warning into new area - requires three segments)

(Segment 1 of 3 within WSW - cancel part of warning)
MTZ059-061-232200- (UGC line)
/CAN.KGGW.WS.W.0004.000000T0000Z-030323T2200Z (P-VTEC ln)

(Segment 2 of 3 within WSW - downgrade part of warning to advisory)
MTZ016>024-060-062-232200- (UGC line)
/CAN.KGGW.WS.W.0004.000000T0000Z-030323T2200Z (P-VTEC ln 1)
/NEW.KGGW.SN.Y.0008.030323T1600Z-030323T2200Z (P-VTEC ln 2)

(Segment 3 of 3 within WSW - extend warning into new area)
MTZ025>027-232200- (UGC line)
/EXA.WS.W.0004.000000T0000Z-030323T2200Z (P-VTEC line)

Interpretation: A Winter Storm Warning was in effect for WFO Glasgow, MT, zones 16-25 and 59-62. The WFO then issued a WSW canceling part of the warning (Montana zones 59 and 61- from the UGC line, segment 1), downgrading part of the warning to an advisory (Montana zones 16-24, 60 and 62 - from the UGC line, segment 2), and extending the warning in area (Montana zones 26-27 - from the UGC line, segment 3) (while keeping Montana zone 25 in the warning).

Segment 1 (MT zones 59 and 61): The one P-VTEC line is used to cancel the warning (the 4th of the year) for zones 59 and 61, valid at time of issuance of the WSW product.

Segment 2 (MT zones 16-24): Two P-VTEC lines are used: P-VTEC line (1) cancels the warning for Montana zones 16-24, 60 and 62 at time of issuance of the WSW (which was to have expired on March 23, 2003, at 2200 UTC). P-VTEC line (2) "downgrades" the warning for Montana zones 16-24, 60 and 62 to a new snow advisory, valid from March 23, 2003, at 1600 UTC until the 23rd at 2200 UTC.

Segment 3 (MT zones 25-27): The one P-VTEC line is used to extend the warning in area to Montana zones 26-27 (in addition to keeping zone 25 in the warning), valid from March 23, 2003 at time of issuance until the 23rd at 2200 UTC.

d. A Complete Sample Product. See NWSI 10-1701 for details of overall product format and headers.

WWUS41 KBUF 300628
WSWBUF

URGENT - WINTER WEATHER MESSAGE
NATIONAL WEATHER SERVICE BUFFALO NY
230 AM EST WED NOV 30 2002

...A LAKE EFFECT SNOW ADVISORY IS IN EFFECT FOR EASTERN LAKE ONTARIO COUNTIES TODAY AND IS EXTENDED THROUGH EARLY TUESDAY MORNING...
...THE WINTER STORM WARNING FOR WESTERN NEW YORK HAS BEEN CANCELED...

.WEST WINDS WILL DEVELOP LATE THIS MORNING AND BRING LAKE EFFECT SNOW TO COUNTIES EAST OF LAKE ONTARIO.

NYZ006>008-301230- (UGC line)
/CAN.KBUF.WS.W.0013.000000T0000Z-021201T1230Z/ (P-VTEC line 1)
/EXT.KBUF.LE.A.0021.021130T1400Z-021201T0700Z/ (P-VTEC line 2)
NORTHWEST COAST-
INCLUDING THE CITIES OF...OSWEGO...WATERTOWN

(TEXT - including repeat of headlines)

$$

(Other segments, as appropriate)

Interpretation: WFO Buffalo, NY, issued a WSW on Wednesday, November 30, 2002, at 2:30 a.m. (for New York zones 6-8 - from the UGC line). The WSW canceled the Winter Storm Warning (the 13th of the year) that would have been valid until 1230 UTC on December 1 (from P-VTEC line 1). The WSW also extended the Lake Effect Snow Advisory (the 21st of the year), valid until 0700 UTC on December 1 (from P-VTEC line 2).

2. P-VTEC and H-VTEC Examples and Interpretations. Following are examples of P-VTEC lines used with H-VTEC lines and interpretations (including the preceding UGC line that defines the affected geographic area and product purge time).

a. Flash Flood Warning (FFW).

WGUS51 KOKX 141656
FFWOKX
NYC103-141800-
/NEW.KOKX.FF.W.0101.000814T1655Z-000814T1800Z/
/0.ER.000000T0000Z.000000T0000Z.000000T0000Z.0/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE NEW YORK NY

1255 PM EDT MON AUG 14 2000

THE NATIONAL WEATHER SERVICE IN UPTON NY HAS ISSUED A

* FLASH FLOOD WARNING FOR
  SOUTHWEST SUFFOLK COUNTY IN SOUTHEASTERN NEW YORK STATE

* UNTIL 200 PM EDT

* AT 1254 PM NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED THUNDERSTORMS MOVING NORTHWEST TOWARD THE WARNED AREA. RAINFALL RATES FROM 2 TO 3 INCHES PER HOUR WILL CAUSE FLASH FLOODING OF LOW LYING AND POOR DRAINAGE AREAS.

DO NOT DRIVE YOUR VEHICLE INTO AREAS WHERE THE WATER COVERS THE ROADWAY. VEHICLES CAUGHT IN RISING WATER SHOULD BE ABANDONED. MOVE TO HIGHER GROUND IMMEDIATELY.

REPORT SEVERE WEATHER TO THE NEAREST LAW ENFORCEMENT AGENCY. THEY WILL RELAY YOUR REPORT TO THE NATIONAL WEATHER SERVICE FORECAST OFFICE IN UPTON.

$$

b. Areal Flood Warning (FLW).

WGUS46 KOTX 061803
FLWOTX
WAC051-070100-
/NEW.KOTX.FL.W.0001.020606T1803Z-020607T0100Z/
/0.ER.000000T0000Z.000000T0000Z.000000T0000Z.0/

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE SPOKANE WA
1102 AM PDT THU JUN 6 2002

...FLOOD WARNING HAS BEEN ISSUED FOR THE PEND OREILLE RIVER IN PEND OREILLE COUNTY IN NORTHEAST WASHINGTON...

ON THE PEND OREILLE RIVER BELOW ALBENI FALLS DAM...THE MOST RECENT READING WAS 91,800 CFS AT 10 AM THURSDAY. THE FLOOD FLOW IS 100,000 CFS. THE OUTFLOW FROM ALBENI FALLS DAM IS FORECAST TO REMAIN BETWEEN 90000 AND 95000 CFS THROUGH FRIDAY.

THOUGH THE RIVER IS CURRENTLY BELOW THE FLOOD FLOW...MINOR FLOODING IS BEING REPORTED ALONG THE RIVER DOWNSTREAM FROM NEWPORT TO THE CANADIAN BORDER. SEVERAL STRUCTURES ARE FLOODED AND SOME SAND BAGGING OPERATIONS ARE OCCURRING. ANY RAINFALL WILL ADD TO THE EXISTING HIGH FLOW.

BOATERS AND PERSONS WITH INTERESTS ALONG THE PEND OREILLE RIVER ARE URGED TO USE EXTREME CAUTION WHEN NEAR OR ON THE RIVER. STAY TUNED TO FURTHER DEVELOPMENTS BY LISTENING TO NOAA WEATHER RADIO OR YOUR LOCAL TV OR RADIO STATIONS.

$$

c. River Flood Warning (FLW).

WGUS43 KFSD 141205
FLWFSD

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE SIOUX FALLS SD
605 AM CST FRI DEC 14 2001

THE NATIONAL WEATHER SERVICE IN SIOUX FALLS HAS ISSUED A

FLOOD WARNING FOR THE FOLLOWING RIVER LOCATIONS IN SOUTHEAST SOUTH DAKOTA AND WESTERN IOWA...
BIG SIOUX RIVER NEAR BROOKINGS
BIG SIOUX RIVER NEAR DELL RAPIDS
BIG SIOUX RIVER AT AKRON

(text)

SDC011-101-150005-
/NEW.KFSD.FL.W.0967.011214T1205Z-011220T1200Z/
/2.ER.011216T1600Z.011218T1600Z.011219T1900Z.NO/

(text)

$$

SDC099-150005-
/NEW.KFSD.FL.W.0967.011214T1205Z-011220T1200Z/
/3.ER.011217T0400Z.011218T1700Z.011220T0200Z.NO/

(text)

$$

IAC149-SDC127-150005-
/NEW.KFSD.FL.W.0967.011214T1205Z-011220T1200Z/
/2.ER.011217T0400Z.011218T1900Z.011220T1200Z.NO/

(text)

$$

d. River Flood Statement (FLS).

RWUS42 KMLI 031536
FLSMLI

FLOOD STATEMENT
NATIONAL WEATHER SERVICE QUAD CITIES IA IL
1035 AM CDT FRI MAY 03 2002

...THE FLOOD WARNINGS FOR GLADSTONE AND BURLINGTON ON THE MISSISSIPPI RIVER ARE NO LONGER IN EFFECT...

IAZ089-ILZ025-032130-
/CAN.KMLI.FL.S.0079.000000T0000Z-020503T1535Z/
/1.ER.020426T2000Z.020430T1100Z.020503T1300Z.NO/

MISSISSIPPI RIVER NEAR GLADSTONE
* 9 AM STAGE: 9.9 FT.
* FLOOD STAGE: 10.0 FT.
* CRESTED 11.19 FT AT 5 AM APRIL 30TH.
* FELL BELOW FLOOD STAGE AT 8 AM THIS MORNING AND WILL CONTINUE TO FALL.
* THIS WILL BE THE LAST STATEMENT FOR THIS LOCATION FOR THIS EVENT.

IAZ099-ILZ034-032130-
/CAN.KMLI.FL.S.0079.000000T0000Z-020503T1535Z/
/1.ER.020426T2000Z.020429T2300Z.020503T1535Z.NO/

MISSISSIPPI RIVER AT BURLINGTON
* 9 AM STAGE: 15.0 FT.
* FLOOD STAGE: 15.0 FT.
* CRESTED 16.10 FT AT 6 PM APRIL 29TH.
* IS CURRENTLY FALLING BELOW THE FLOOD STAGE AND WILL CONTINUE TO

FALL.
* THIS WILL BE THE LAST STATEMENT FOR THIS LOCATION FOR THIS EVENT.

$$